Third West Air Monitor Result
Shepherd, Michael
to:
Joyce Ackerman, 'Craig Bamitz (cbamitz@utah.gov)'
05/22/2012 12:50 PM
Hide Details
From: "Shepherd, Michael" <Michael.Shepherd@rockymountainpower.net>

To: Joyce Ackerman/R8/USEPA/US@EPA, "'Craig Bamitz (cbamitz@utah.gov)'" <cbamitz@utah.gov>

1 Attachment

236132-1.pdf

Joyce & Craig,

We had a positive hit on Thursday, May 17, 2012. It was chrysotile, see the attached. Please let me know if you have any questions or concerns.

Thanks,

Mike Shepherd
Project Manager
Rocky Mountain Power - Major Projects
801.220.4584 Office
801.631.1310 Cell
801.220.2797 Fax
michael.shepherd@pacificorp.com

REI LAB Reservoirs Environmental, Inc.

May 22, 2012

Laboratory Code:	RES
Subcontract Number:	NA
Laboratory Report:	RES 236132-1
Project # / P.O. #	None given
Project Description:	3rd West Sub-RMP

R & R Environmental
47 West 9000 South #2
Sandy UT 84070

Dear Customer,

Reservoirs Environmental, Inc. is an analytical laboratory accredited for the analysis of Industrial Hygiene and Environmental matrices by the National Voluntary Laboratory Accreditation Program (NVLAP), Lab Code 101896-0 for Transmission Electron Microscopy (TEM) and Polarized Light Microscopy (PLM) analysis and the American Industrial Hygiene Association (AIHA), Lab ID 101533 - Accreditation Certificate #480 for Phase Contrast Microscopy (PCM) analysis. This laboratory is currently proficient in both Proficiency Testing and PAT programs respectively.

Reservoirs Environmental, Inc. has analyzed the following samples for asbestos content as per your request. The analysis has been completed in general accordance with the appropriate methodology as stated in the attached analysis table. The results have been submitted to your office.

RES 236132-1 is the job number assigned to this study. This report is considered highly confidential and the sole property of the customer. Reservoirs Environmental, Inc. will not discuss any part of this study with personnel other than those of the client. The results described in this report only apply to the samples analyzed. This report must not be used to claim endorsement of products or analytical results by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without written approval from Reservoirs Environmental, Inc. Samples will be disposed of after sixty days unless longer storage is requested. If you have any questions about this report, please feel free to call 303-964-1986.

Sincerely,

Jeanne Spencer
President

RESERVOIRS ENVIRONMENTAL, INC.

NVLAP Lab Code 101896-0; TDH: #30-0015

TABLE I. TEM AIR FILTER SAMPLE DATA AND ANALYTICAL RESULTS

RES Job Number:	RES 236132-1
Client:	R & R Environmental
Client Project Number / P.O.:	None given
Client Project Description:	3rd West Sub-RMP
Date Samples Received:	May 19, 2012
Analysis Type:	TEM, AHERA
Turnaround:	24 Hour
Date Samples Analyzed:	May 21, 2012

Client ID Number	Lab ID Number	Area Analyzed	Air Volume Sampled	Number of Asbestos Structures Detected	Analytical Sensitivity	Asbestos Concentration	Filter Loading
		(mm^2)	(L)		(s/cc)	(s/cc)	(s/mm^2)
3W-051712W	EM 881981	0.0900	889	1	0.0048	0.0048	11.1
3W-051712N	EM 881982	0.0900	891	ND	0.0048	BAS	BAS
3W-051712E	EM 881983	0.0900	887	ND	0.0048	BAS	BAS
3W-051712S	EM 881984	0.0900	885	ND	0.0048	BAS	BAS

NA = Not Analyzed
ND = None Detected
BAS = Below Analytical Sensitivity
Average Grid Opening in mm^2 = 0.010

Filter Material = Mixed Cellulose Ester
Filter Diameter = 25 mm
Effective Filter Area = 385 sq mm

DATA QA

RESERVOIRS ENVIRONMENTAL, INC.

NVLAP Lab Code 101896-0; TDH: #30-0015

TABLE II. SUMMARY OF ANALYTICAL DATA

RES Job Number:	RES 236132-1
Client:	R & R Environmental
Client Project Number / P.O.:	None given
Client Project Description:	3rd West Sub-RMP
Date Samples Received:	May 19, 2012
Analysis Type:	TEM, AHERA
Turnaround:	24 Hour
Date Samples Analyzed:	May 21, 2012

Client ID Number	Lab ID Number	Asbestos Mineral	Asbestos Structure Types*				Structures >5 Microns in Length	**Excluded Structures	Asbestos Structures for Concentration
			Fibers	Bundles	Clusters	Matrices			
3W-051712W	EM 881981	Chrysotile	0	1	0	0	1	0	1
3W-051712N	EM 881982	ND	0	0	0	0	0	0	0
3W-051712E	EM 881983	ND	0	0	0	0	0	0	0
3W-051712S	EM 881984	ND	0	0	0	0	0	0	0

*See Analytical Procedure for definitions
**C = Excluded from total due to lack of confirmation
**L = Excluded from total for length less than 0.5 micron (AHERA only)
**A = Excluded from total due to incorrect aspect ratio
ND = None Detected

RES 236132

Due Date: 5/22
Due Time: 11a

Reservoirs Environmental, Inc.

6801 Logan St. Denver, CO 80216 • Ph: 303 964-1986 • Fax 303-477-4276 • Toll Free :866 RESI-ENV
Pager: 303-509-2098

Page 1 of 1

INVOICE TO: (IF DIFFERENT) **CONTACT INFORMATION:**

Company: R&R Environmental	Company:	Contact: Dave Roskelley	Contact:
Address: 47 W 9000S #2	Address:	Phone:	Phone:
Sandy Ut. 84070		Fax:	Fax:
		Call/pager: 801 541-1835	Call/pager:
Project Number and/or P.O. #:		Final Data Deliverable Email Address:	
Project Description/Location: 3rd West Sub-RMP		dave@rrenviro.com	

ASBESTOS LABORATORY HOURS: Weekdays: 7am - 7pm
PLM / PCM / (TEM) ___ RUSH (Same Day) X PRIORITY (Next Day) ___STANDARD
(Rush PCM = 2hr, TEM = 6hr.)

CHEMISTRY LABORATORY HOURS: Weekdays: 8am - 5pm
Metal(s) / Dust ___ RUSH ___ 24 hr. ___3-5 Day
RCRA 8 / Metals & Welding Fume Scan / TCLP ___ RUSH ___ 5 day ___10 day
Organics ___ 24 hr. ___ 3 day ___5 Day
Prior notification is required for RUSH turnarounds.

MICROBIOLOGY LABORATORY HOURS: Weekdays: 9am - 6pm
E.coli O157:H7, Coliforms, S.aureus ___ 24 hr. ___2 Day ___3-5 Day
Salmonella, Listeria, E.coli, APC, Y & M ___ 48 Hr. ___3-5 Day
Mold ___ RUSH ___24 Hr ___48 Hr ___3 Day ___5 Day

Turnaround times establish a laboratory priority, subject to laboratory volume and are not guaranteed. Additional fees apply for afterhours, weekends and holidays.

Special Instructions:

REQUESTED ANALYSIS: PLM - Short report, Long report, Point Count; TEM - AHERA, Level II, 7402, ISO, +/-, Quant, Semi-quant, Micro-vac, ISO-Indirect Preps; PCM - 7400A, 7400B, OSHA; DUST - Total, Respirable; METALS - Analyte(s), RCRA 8, TCLP, Welding Fume, Metals Scan; ORGANICS - METH; MICROBIOLOGY: Salmonella: +/-; E.coli O157:H7: +/-; Listeria: +/-; Aerobic Plate Count: +/- or Quantification; E.coli: +/- or Quantification; Coliforms: +/- or Quantification; S.aureus: +/- or Quantification; Y & M: +/- or Quantification; Mold: +/-, Identification, Quantification; SAMPLER'S INITIALS OR OTHER NOTES

VALID MATRIX CODES: Air = A, Bulk = B, Dust = D, Paint = P, Soil = S, Wipe = W, Swab = SW, F = Food, Drinking Water = DW, Waste Water = WW, O = Other
ASTM E1792 approved wipe media only

LAB NOTES:

#	Client sample ID number (Sample ID's must be unique)	PLM	TEM	PCM	DUST	METALS	ORGANICS	MICROBIOLOGY	SAMPLER'S INITIALS OR OTHER NOTES	Sample Volume (L) / Area	Matrix Code	# Containers	Date Collected mm/dd/yy	Time Collected hh/mm a/p	EM Number (Laboratory Use Only)
1	3W-051712 W		X							889	A		5/17/12		881981
2	3W-051712 N		↓							891	↓		↓		82
3	3W-051712 E		↓							887	↓		↓		83
4	3W-051712 S		↓							885	↓		↓		84
5															
6															
7															
8															
9															
10															

Number of samples received: ________ (Additional samples shall be listed on attached long form.)

NOTE: REI will analyze incoming samples based upon information received and will not be responsible for errors or omissions in calculations resulting from the inaccuracy of original data. By signing client/company representative agrees that submission of the following samples for requested analysis as indicated on this Chain of Custody shall constitute an analytical services agreement with payment terms of NET 30 days, failure to comply with payment terms may result in a 1.5% monthly interest surcharge.

Relinquished By: [signature] FedEx Date/Time: 5/17/12
Laboratory Use Only Received By: [signature] TS Date/Time: 5/19/12 11A Carrier: FEDEX
Sample Condition: Temp. (F°) ______ On Ice Yes / No Sealed (Yes) / No Intact (Yes) / No

Results:	Contact	Phone Email Fax	Date	Time	Initials	Contact	Phone ~~Email~~ Fax	Date 5-22-12	Time 1132	Initials [initials]
	Contact	Phone Email Fax	Date	Time	Initials	Contact	Phone ~~Email~~ Fax	Date	Time	Initials

#7984 0892 5947

Attachment I

Key to Count Sheets
Count Sheets
Analytical Procedures

Structures identifications consist of an Asbestos Type followed by a Structure Type

Asbestos Type	Structure Types
A = Amosite	F = Fiber
An = Anthophyllite	B = Bundle
C = Chrysotile	C = Cluster
Cr = Crocidolite	M = Matrix
T = Tremolite	

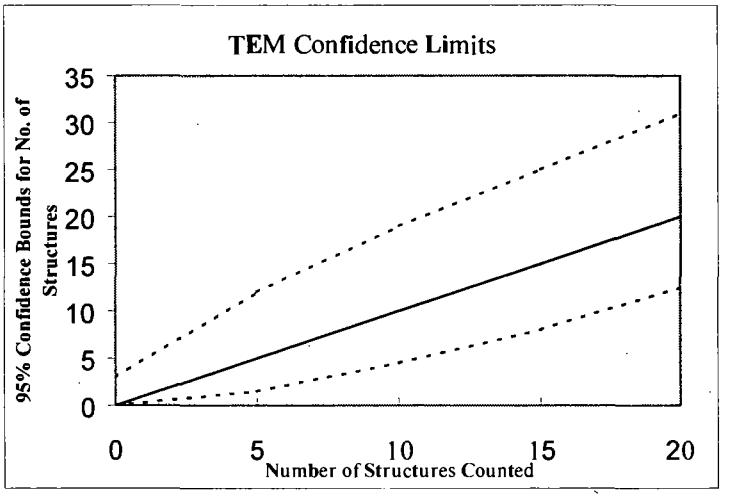
ND = no structures detected
M = other structure associated with a matrix
NAM = Non Asbestos Mineral
XGB = partly obscured by a grid bar

Sizing Conversion
1 length unit = 5 mm on screen = 0.278 micron
1.80 length units = 0.5 micron
18.0 length units = 5 microns

1 width unit = 1 mm on screen = 0.0556 micron

TEM Analysts

Jeanne S. Orr
Nathan DelHierro
Angela Heitger
Jonathan Bernard
Paul D. LoScalzo
Mark Steiner
Norberto Zimbleman
Robert Workman



Upper and lower 95% confidence bounds for the number of structures counted assuming a Poisson distribution.

Reservoirs Environmental, Inc.
TEM Asbestos Structure Count

Laboratory name:	RE1
Instrument	JEOL 100 CX N S
Voltage (KV)	100 KV
Maonification	(20)KX 10KX
Grid opening area (mm2)	0.01
Scaie: 1L =	0.28 um
Scale: 1D =	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	
QA Type	

Client :	R+R
Sample Type (A=Air, D=Dust):	A
Air volume (L) or dust area (cm2)	889
Date received by lab	5/19/12
Lab Job Number:	236132
Lab Sample Number:	881981

F-Factor Calcuiatiort (Indirect Preps Only):

Fraction of primary filter used	
Total Resuspension Volume (ml)	
Volume Applied to secondary filter (ml)	

Analyzed by	AH
Analysis date	5/21/12
Method (D=Direct, I=Indirect, 1A=Indirect, ashed)	D
Counting rules (ISO, AHERA, ASTM)	Ahera
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

Grid	Grid Opening	Structure Type	No. of Structures		Dimensions		Identification	Mineral Class			Sketch/Comments	1 = yes, blank = no		
			Primary	Total	Length	Width		Amphibole	C	NAM		Sketch	Photo	EDS
A	K5-3	ND												
	H5-3	B		1	18	5	CD		✓		[redacted]			
	G5-3	ND												
	F5-3	ND		Prep A: 80% intact 5-10% debris										
	E5-3	ND		Prep B ~ Prep A										
B	K4-1	ND												
	H4-1	ND												
	G4-1	ND												
	F4-1	ND												

LA = Libby-type amphibole OA = Other (non-Libby type) amphibole C = Chrysotiie NAM = Non-asbestos material

Reservoirs Environmental, Inc.
TEM Asbestos Structure Count

Laboratory name:	REI
Instrument	JEOL 100 CX N (S)
Voltage (KV)	100 KV
Magnification	(20)KX 10KX
Grid opening area (mm2)	0.01
Scale: 1L =	0.28 um
Scale: 1D =	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	
QA Type	

Client :	R&R
Samole Tvoe (A=Air, D=Dust):	A
Air volume (L) or dust area (cm2)	891
Date received tnr lab	5/19/12
Lab Job Number:	236132
Lab Sample Number:	881982

F-Factor Calculation (Indirect Preps Only):

Fraction of primary filter used	
Total Resuspension Volume (ml)	
Volume Applied to secondary filter (ml)	

Analyzed by	AH
Analysis date	5/21/12
Method (D=Direct, I=Indirect, IA=Indirect, ashed)	D
Counting rules (ISO, AHERA, ASTM)	Ahera
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

Grid	Grid Opening	Structure Type	No. of Structures		Dimensions		Identification	Mineral Class			Sketch/Comments	1 = yes, blank = no		
			Primary	Total	Length	Width		Amphibole	C	NAM		Sketch	Photo	EDS
A	1C4-6	ND												
	H-6	ND												
	G4-6	ND		Prep A: 90% intact				10-15% debris						
	F4-6	ND		Prep B: 80% intact				10-15% debris						
	E4-6	ND												
B	F5-4	ND												
	E5-4	ND												
	C5-4	ND												
	B5-4	ND												

LA = Libby-type amphibole OA = Other (non-Libby type) amphibole C = Chrysolile NAM = Non-asbestos material

Reservoirs Environmental, Inc.
TEM Asbestos Structure Count

Laboratory name:	REI
Instrument	JEOL 100 CX N (S)
Voltage (KV)	100 KV
Magnification	(20KX) 10KX
Grid ooenina area (mm2)	0.01
Scale: 1L =	0.28 um
Scale: 1D =	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	
QA Tvoe	

Client :	R+R
Sample Type (A=Air, D=Dust):	A
Air volume (L) or dust area (cm2)	887
Date received by lab	5/19/12
Lab Job Number:	236132
Lab Sample Number:	881983

F-Factor Calculation (Indirect Preps Only):

Fraction of primary filter used	
Total Resuspension Volume (ml)	
Volume Applied to secondary filter (ml)	

Analyzed by	AH
Analysis date	5/21/12
Method (D=Direct, I=Indirect, IA=Indlrect, ashed)	D
Counting rules (ISO, AHERA, ASTM)	Ahera
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

Grid	Grid Opening	Structure Type	No. of Structures		Dimensions		Identification	Mineral Class			Sketch/Comments	1 = yes, blank = no		
			Primary	Total	Length	Width		Amphibole	C	NAM		Sketch	Photo	EDS
A	E6-6	ND												
	C6-6	ND												
	B6-6	ND					Prep A: 60% intact 10% debris							
	E5-3	ND					Prep B ~ Prep A							
	C5-3	ND												
B	G4-4	ND												
	F4-4	ND												
	E4-4	ND												
	C4-4	ND												

LA = Libby-type amphibole OA = Other (non-Libby type) amphibole C = Chrysotile NAM = Non-asbestos material

Reservoirs Environmantal, Inc.
TEM Asbestos Structure Count

Laboratory name:	REI
Instmment	JEOL 100 CX N (S)
Voltage (KV)	100 KV
Magnification	(20)KX 10KX
Grid openina area (mm2)	0.01
Scale: IL =	0.28 um
Scale: 1D =	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	
QA Tvoe	

Client :	R+R
Sample Tvoe (A=Air, D=Dust):	A
Air volume (L) or dust area (cm2)	885
Oate received by lab	5/19/12
Lab Job Number:	236132
Lab Sample Number:	881984

F-Factor Calculation (Indirect Preps Only):

Fraction of primaty filter used	
Total Resuspension Volume (ml)	
Volume Applied to secondary filter (ml)	

Analyzed by	AH
Analysis date	5/21/12
Method (D=Oirect, I=Indirect, IA=indirect, ashed)	D
Counting rules (ISO, AHERA, ASTM)	Ahera
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

Grid	Grid Opening	Structure Type	No. of Stmctures		Dimensions		Identification	Mineral Class			Sketch/Comments	1 = yes, blank = no		
			Primary	Total	Length	Width		Amphibole	C	NAM		Sketch	Photo	EDS
A	K4-3	ND												
	H4-3	ND												
	G4-3	ND			Prep A: 80% intact			10% debris						
	F4-3	ND			Prep B ~ Prep A									
	E4-3	ND												
B	F3-4	ND												
	E3-4	ND												
	C3-4	ND												
	B3-4	ND												

LA = Libby-type amphiboie OA = Other (non-Libby type) amphiboie C = Chrysotile NAM = Non-asbestos material

Analytical Procedures – AHERA

Transmission electron microscopy/energy dispersive X-ray spectrometry/selected area electron diffraction (TEM/EDX/SAED) was employed in the analysis of the samples, which were collected on 25 mm mixed cellulose ester air filters. A portion of each filter was collapsed with acetone and etched in a plasma asher. The etched filter was then coated with a thin layer of carbon in a carbon side down. The sample was then placed inside a condensation washer and treated with acetone to remove the filter matrix and expose any inert material.

For each sample, enough grid openings on a 200 mesh TEM grid are analyzed to ensure an analytical sensitivity of at least 0.005 structures/cc. A minimum of four grid openings from two preparations are analyzed for each sample. The grid openings are searched for fibrous structures which, if present are analyzed by SAED and/or EDX (elemental analysis). The AHERA protocol requires SAED confirmation of enough chrysotile asbestos structures on each sample to cause the sample to exceed 70 structures/mm^2 (usually 4 or 5 structures). Both SAED and EDX confirmation are required of enough amphibole structures on each sample to cause the sample to exceed 70 structures/mm^2 (usually 4 or 5 structures) per sample. Either SAED or EDX is required for the remaining asbestos structures of either type. The morphology of each structure is determined and the length and the diameter of any asbestos structures are recorded. Asbestos fibers, bundles, cluster and matrices were identified and recorded. The asbestos structures have been defined in AHERA as follows:

Fiber:	is a structure having a minimum length greater than or equal to 0.5 micron with an aspect ratio of 5:1 or greater with substantially parallel sides.
Bundle:	is a structure composed of three or more fibers in parallel arrangement, with each fiber closer than the diameter of one fiber.
Cluster:	is a structure with fibers in random arrangements such that all fibers are intermixed and no single fiber is isolated from the group.
Matrix:	is a fiber or fibers with one end free and the other end embedded or hidden by a particulate. The exposed fiber end must meet the fiber definition given above.

If more than 50 asbestos structures are identified and confirmed on a sample, AHERA analysis may be terminated after completion of the grid opening, which contains the 50^{th} structure. AHERA protocol requires the laboratory to reject any clearance sample which contains in excess of 25% total particulate loading or which appears to be unevenly loaded.

The AHERA protocol includes specific sampling requirements, including minimum numbers of samples and minimum air volumes. Specifically, the 70 structures/mm^2 clearance criteria is only allowed for sets five inside samples (collected in a group of 13 samples including: five outsides and three blanks) with volumes greater than 1200 liters (40 CFR Part 763, page 41894). Deviation from the AHERA sampling protocol may affect the validity of the analytical results. Analysis of samples collected by non-protocol methods are not accredited by NVLAP

Equations Used for Calculations

$$\text{Area Analyzed, } mm^2 = \#\text{ GO counted} \times \text{Average GO Area (mm)}$$

$$\text{Concentration, s/cc} = \frac{\#\text{ Asbestos Structures}}{\#\text{ GO Counted}} \times \frac{1}{\text{Volume (L)}} \times \frac{\text{Eff. Filter Area } (mm^2)}{\text{Average GO area } (mm^2)} \times \frac{1L}{1000cc}$$

$$\text{Filter loading, s/mm2} = \frac{\#\text{ Asbestos structures}}{\text{Area Analyzed } (mm^2)}$$

GO = TEM grid opening

File: Shared on server T/Offforms.sg/AHERA Procedures
Revised: 02/27/02